

Abstract

A processing gas constituted of CH_2F_2 , O_2 and Ar is introduced into a processing chamber 102 of a plasma processing apparatus 100. The flow rate ratio of the constituents of the processing gas is set at $\text{CH}_2\text{F}_2/\text{O}_2/\text{Ar} = 20\text{sccm}/10\text{sccm}/100\text{sccm}$. The pressure inside the processing chamber 102 is set at 50mTorr. 500 W high frequency power with its frequency set at 13.56 MHz is applied to a lower electrode 108 on which a wafer W is placed. The processing gas is raised to plasma and thus, an SiN_x layer 206 formed on a Cu layer 204 is etched. The exposed Cu layer 204 is hardly oxidized and C and F are not injected into it.

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